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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,677	07/28/2003	Scott D. Briles	S-100,588	4503

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EXAMINER	
LEE, SIU M	
ART UNIT	**PAPER NUMBER**
2611	

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/628,677	BRILES, SCOTT D.
	Examiner	Art Unit
	Siu M. Lee	2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *7/28/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/28/2003*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

On paragraph 35, lines 16-18 recites that "**When a "0" or "-1" is to be sent, power shunting switch 52a, b connects antenna 35 to contact 34a of modulation switch 34, an infinite impedance.**" According to specification, when a "0" or "-1" is to be sent, the antenna should be connected to contact 34b of modulation switch and ground the antenna (paragraph 35, lines 5-6).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ingram (US 6,509,836 B1) in view of NPL (Potentials, IEEE Volume 18, Issue 4, Oct-Nov 1999, pages 29-33) and Vega et al. (US 6,147,605).

(1) Regarding claim 1:

Ingram discloses a smart reflection antenna method comprising the steps of coding data bit stream (information waveform 91 in figure 2B, column 2, lines 27-30) to

increase its bit rate (the information wave form 91 is multiply with the periodic square wave 90 to increase the frequency in fig 2B) (column 2, lines 24-29) and providing said modified coded data bit stream to a switch (switch 110 in figure 2A) that connects an antenna (tag antenna 88 in figure 2A) to an open stage in the event a "1" is to be sent, or connects said antenna to an close stage in the event a "0" is to be sent (open and close stage according to an impedance control signal 89, open is being interpreted as an indefinite impedance and open is being interpreted as short to the ground) (column 1, lines 56-65).

Ingram fails to explicitly discloses that connects an antenna to an infinite impedance in the event a "1" is to be sent, or connects said antenna to ground in the event a "0" is to be sent; and disclose a method of generating a phase-modulated reflectance data bit stream.

However, NPL discloses connects an antenna to an infinite impedance in the event a "1" is to be sent (maximum reflection), or connects said antenna to ground in the event a "0" is to be sent (maximum absorption) (page 31, column 3, lines 51-60).

It is desirable to connects an antenna to an infinite impedance in the event a "1" is to be sent, or connects said antenna to ground in the event a "0" is to be sent as taught by the NPL because it will maximize the signal to noise ratio. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the method of the NPL in the system of Ingram to improve the SNR ratio.

Vega et al. discloses a method and apparatus for radio frequency identification tag that generates a phase-modulated reflectance data bit stream (modulator 221 in figure 3, column 6, lines 39-45).

It is desirable to modulate the data bit stream as taught by Vega et al. because it can improve the efficiency and read range (column 13, lines 34-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the modulation method of Vega et al. with the system of Ingram to improve the efficient of the system.

(2) Regarding claim 4:

Ingram discloses a smart reflection antenna method comprising a coder (multiplying of the information wave form with the periodic square wave in figure 2B) receiving said data bit stream (information waveform 91 in figure 2B) for modifying said data bit stream and increasing said pre-selected rate (the information wave form 91 is multiply with the periodic square wave 90 to increase the frequency in fig 2B) (column 2, lines 24-29); and a switch (switch 110 in figure 2A) receiving said data bit stream (impedance control signal) and connecting an antenna (tag antenna 88 in figure 2A) to an infinite impedance "1" is to be sent, and connecting said antenna to ground if a "0" is to be sent (open and close stage according to an impedance control signal 89, open is being interpreted as an indefinite impedance and open is being interpreted as short to the ground) (column 1, lines 56-65).

Ingram fails to explicitly discloses that connects an antenna to an infinite impedance if a "1" is to be sent, or connects said antenna to ground if a "0" is to be

sent; and disclose a modulated reflectance unit generating a phase-modulated data bit stream at a pre-selected rate.

However, NPL discloses connects an antenna to an infinite impedance in the event a "1" is to be sent (maximum reflection), or connects said antenna to ground in the event a "0" is to be sent (maximum absorption) (page 31, column 3, lines 51-60).

It is desirable to connect an antenna to an infinite impedance in the event a "1" is to be sent, or connects said antenna to ground in the event a "0" is to be sent as taught by the NPL because it will maximize the signal to noise ratio. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the method of the NPL in the system of Ingram to improve the SNR ratio.

Vega et al. discloses a modulated reflectance unit (modulator 221 in figure 3) generating a phase-modulated data bit stream at a pre-selected rate (modulator encoder 221 uses any suitable means of modulation to encode information, including phase modulation) (column 6, lines 39-45).

It is desirable to modulate the data bit stream as taught by Vega et al. because it can improve the efficiency and read range (column 13, lines 34-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the modulator of Vega et al. with the system of Ingram to improve the efficient of the system.

4. Claims 2-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ingram (US 6,509,836 B1) in view of NPL (Potentials, IEEE Volume 18, Issue 4,

Oct-Nov 1999, pages 29-33) and Vega et al. (US 6,147,605) as applied to claims 1 and 4 above, and further in view of Montgomery (US 2003/0232600 A1).

(1) Regarding claim 2:

Ingram, NPL and Vega et al. disclose all the subject matter as discussed in claim 1 except the step of controlling output of said match switch by selectively passing said output through at least one power splitter before said output is passed to said antenna.

However, Montgomery et al. (US 2003/0232600 A1) discloses a step of controlling output (signal transmit to from port 1 in figure 5) of said match switch by selectively passing said output through at least one power splitter (passive intermodulation (PIM) diplexer control circuit 50 in figure 5) before said output is passed to said antenna (signal transmit to port 2 in figure 5) (paragraph 113, lines 4-10).

It is desirable to selectively passing said output through at least one power splitter as taught by Montgomery et al. because it can provide an improved system for suppressing intermodulation interference in communication system (paragraph 166, lines 1-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teaching of Montgomery et al. with the method of Ingram, NPL and Vega et al. to improve the quality of the transmitted signal.

(2) Regarding claim 3:

Montgomery further discloses that the at least one power splitter is one power splitter (passive intermodulation (PIM) diplexer control circuit 50 in figure 5) (paragraph 113, lines 4-10).

(3) Regarding claim 5:

Ingram, NPL and Vega et al. disclose all the subject matter as discussed in claim 4 except the apparatus further comprising a power splitter (passive intermodulation (PIM) diplexer control circuit 50 in figure 5) for controlling said output (signal transmitted from port 1 in figure 5) of said switch by passing said output to at least one power splitter before it is passed to said antenna (port 2 in figure 5).

However, Montgomery et al. (US 2003/0232600 A1) discloses an apparatus that further comprising a power splitter for controlling said output of said switch by passing said output to at least one power splitter before it is passed to said antenna (paragraph 113, lines 4-10).

It is desirable to selectively controlling said output of said switch by passing said output to at least one power splitter before it is passed to said antenna as taught by Montgomery et al. because it can provide an improved system for suppressing intermodulation interference in communication system (paragraph 166, lines 1-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teaching of Montgomery et al. with the method of Ingram, NPL and Vega et al. to improve the quality of the transmitted signal.

(4) Claim 6:

Montgomery further discloses the at least one power splitter is one power splitter (passive intermodulation (PIM) diplexer control circuit 50 in figure 5) (paragraph 113, lines 4-10).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ingram (US 6,509,836 B1) in view of NPL (Potentials, IEEE Volume 18, Issue 4, Oct-Nov 1999, pages 29-33) and Vega et al. (US 6,147,605) as applied to claims 1 and 4 above, and further in view of Lewinter (US 4,499,594).

(1) Regarding claim 7:

Ingram discloses a smart reflection antenna method comprising the steps of generating square waves (periodic square wave 90 in figure 2B); multiplying said square waves with a data stream (information wave form) (multiplying of the information wave form 91 with the periodic square wave 90 to generate the impedance control signal 89 in figure 2B) (column 2, lines 24-30) providing said multiplication to a switch (switch 110 in figure 2A) that connects an antenna to an infinite impedance (terminal 92 open states in figure 2A) in the event a "+1" is to be sent, or connects said antenna to ground (terminal 93 closed stage in figure 2A) in the event a "0" is to be sent.

Ingram fails to disclose; (a) generating a phase-modulated reflectance data bit stream; and (b) converting said phase-modulated reflectance data bit stream to bipolar states of "+Is" and "-Is"; and (c) explicitly disclose that connect an antenna to an infinite impedance in the event a "1" is to be sent, or connects said antenna to ground in the event a "-1" is to be sent.

With respect to item (a), Vega et al. discloses a method and apparatus for radio frequency identification tag that generates a phase-modulated reflectance data bit stream (modulator 221 in figure 3, column 6, lines 39-45).

It is desirable to modulate the data bit stream as taught by Vega et al. because it can improve the efficient and read range (column 13, lines 34-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the modulation method of Vega et al. with the method and system of Ingram to improve the efficient of the system.

With respect to item (b), Lewinter discloses a digital to analog convert that can convert a binary data stream to bipolar states of "+1s" and "-1s" (figure 2, column 2, lines 11-14).

It is desirable to convert a binary data stream to bipolar states of "+1s" and "-1s" because it reduces the potential for error (column 3, lines 9-11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Lewinter in the system of Ingram to improve the accuracy of the system.

With respect to item (c), NPL discloses connects an antenna to an infinite impedance in the event a "1" is to be sent (maximum reflection), or connects said antenna to ground in the event a "0" is to be sent (maximum absorption) (page 31, column 3, lines 51-60).

It is desirable to connect an antenna to an infinite impedance in the event a "1" is to be sent, or connects said antenna to ground in the event a "0" is to be sent as taught by the NPL because it will maximize the signal to noise ratio. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the method of the NPL in the system of Ingram to improve quality of transmitted signal.

Ingram does not explicit disclose that connect an antenna to an infinite impedance in the event a “1” is to be sent, or connects said antenna to ground in the event a “-1” is to be sent. However, it is inherent that the on/off keying transmission method will transmit according to the high stage (+1) and low state (-1) of the bipolar data.

(2) Regarding claim 8:

Ingram discloses a smart reflection antenna system comprising a square wave generation means (it is not explicitly shown there is a square wave generating means but there must be a means to generate the periodic square wave 90 in figure 5) for outputting square waves (periodic square wave 90 in figure 5); and multiplication means for multiplying together said square waves and a data stream (periodic square wave 90 multiply with the information wave form 91 in figure 2B) (column 2, lines 24-30) and a switch receiving said multiplication for connecting an antenna to an infinite impedance (terminal 92 open states in figure 2A) in the event a "+1" is qued to be sent, and to ground in the event a "-0" is qued to be sent (terminal 93 closed stage in figure 2A).

Ingram fails to disclose; (a) a modulated reflectance unit generating a phase-modulated reflectance data bit stream; and (b) converter means for converting said phase-modulated reflectance data bit stream to bipolar states of "+1" and "-1"; and (c) a switch receiving said multiplication for connecting an antenna to an infinite impedance in the event a "+1" is qued to be sent, and to ground in the event a "-1" is qued to be sent:

With respect to item (a), Vega et al. discloses an apparatus for radio frequency identification tag that generates a phase-modulated reflectance data bit stream (modulator 221 in figure 3, column 6, lines 39-45).

It is desirable to modulate the data bit stream as taught by Vega et al. because it can improve the efficient and read range (column 13, lines 34-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the modulation method of Vega et al. with the method and system of Ingram to improve the efficient of the system.

With respect to item (b), Lewinter discloses a digital to analog convert that can convert a binary data stream to bipolar states of "+1s" and "-1s" (figure 2, column 2, lines 10-13).

It is desirable to convert a binary data stream to bipolar states of "+1s" and "-1s" because it reduce the potential for error (column 3, lines 9-11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Lewinter in the system of Ingram to improve the accuracy of the system.

With respect to item (c), NPL discloses connects an antenna to an infinite impedance in the event a "1" is to be sent (maximum reflection), or connects said antenna to ground in the event a"0" is to be sent (maximum absorption) (page 31, column 3, lines 51-60).

It is desirable to connect an antenna to an infinite impedance in the event a "1" is to be sent, or connects said antenna to ground in the event a"0" is to be sent as taught by the NPL because it will maximize the signal to noise ratio. Therefore, it would have

been obvious to one of ordinary skill in the art at the time of invention to employ the method of the NPL in the system of Ingram to improve quality of transmitted signal.

Ingram does not explicit disclose that connect an antenna to an infinite impedance in the event a "1" is to be sent, or connects said antenna to ground in the event a "-1" is to be sent. However, it is inherent that the on/off keying transmission method will transmit according to the high stage (+1) and low state (-1) of the bipolar data.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carrender (US 2004/0005863 A1) discloses a full-spectrum passive communication system and method. Forster (US 6,456,225 B1) discloses a reflector circuit. Pratt et al. (US 6,914,528 B2) discloses a wireless communication system, radio frequency identification devices, method of enhancing a communications range of a radio frequency identification device, and wireless communication methods. Vavik (US 2003/0137446 A1) discloses a transponder, including transponder system. Eisenberg et al. (US 6,434,194 B1) discloses a combined OOK-FSK/PPM modulation and communication protocol scheme providing low cost, low power consumption short range radio link. Mays et al. (US 6,838,989 B1) discloses a RFID transponder having active backscatter amplifier for re-transmitting a received signal.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Siu M. Lee whose telephone number is (571) 270-1083. The examiner can normally be reached on Mon-Fri, 7:30-4:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Siu M. Lee
10/23/2006

CHIEH M. FAN
SUPERVISORY PATENT EXAMINER